REMARKS

Claims 1-31 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Objections to Specification:

The Examiner states that "Applicant's use of the modal "may" in passim in the disclosure renders such disclosure confusing because it is not clear whether what is so modify actually takes place". Applicants do not understand what the Examiner means by "whether what is so modify actually takes place". Regardless, the use of "may" is extremely common in patent applications to distinguish, for example, between a mandatory case (i.e. "must") and a permissive case. For example, in many instances a given action or event may or may not occur depending on numerous factors. Such instances are clearly and correctly described by use of "may". There is no requirement in the statute or rules that an Applicant must limit the description of his invention to only those instances which must always occur. This type of usage of the term "may" is a well accepted standard in patent disclosure drafting. A search of the USPTO database of patents issued since 1976 reveals over 2.5 million issued patents that use the term "may" in their specifications, a quick spot check of which shows the term "may" to almost always be used in the permissive or modal sense. No one of ordinary skill in the art would be confused by the use of "may" in Applicants' disclosure. Moreover, using a term other than "may" may change the substantive meaning of the disclosure and thus constitute an impermissible change.

The Examiner also states that Applicant's use of "disk drive" instead of "disk" is confusing because "disk drive" is not data storage while "disk" is. However, Applicants note that any one of ordinary skill in the art readily understands that a "disk drive" is a device that includes one or more "disk" storage media. It is common parlance among those of ordinary skill in the art to refer to storing data on a "disk drive" with the implicit understanding that the data is actually stored on "disk". Thus, Applicants assert that no

one of ordinary skill in the art would be in any way confused by Applicants' usage of the term "disk drive".

Section 103(a) Rejection:

The Office Action rejected claims 1-31 under 35 U.S.C. § 103(a) as being unpatentable over Applicants' Admitted Prior Art (hereinafter "AAPA") in view of Katz et al. (U.S. Patent 5,195,100) (hereinafter "Katz"). Applicants respectfully traverse.

Contrary to the Examiner's assertion, neither AAPA nor Katz, alone or in combination, teaches or suggests a storage array controller that is configured initiate an extent scrubbing operation for a data range, wherein the extent scrubbing operation comprises reading the data from the data range, calculating an extent checksum for the data read from the data range, and comparing the extent checksum to a preexisting extent checksum for the data range; wherein if the extent checksum differs from the preexisting extent checksum, the storage array controller is further configured to initiate one or more unit scrubbing operations, wherein each unit scrubbing operation comprises calculating a new unit checksum for a unit of data, wherein the unit of data is comprised within the data range, and comparing the new unit checksum to an existing unit checksum for the unit of data.

The Examiner states that AAPA substantially discloses such array/disk controlling/scrubbing means. The Examiner is incorrect. There is no discussion of any type of scrubbing means in AAPA, much less one capable of performing both extent and unit level scrubbing operations, and the relationship therebetween. Furthermore, Katz does not describe a storage device controller that is configured to perform both extent and unit level scrubbing operations, and the relationship therebetween. Instead, Katz teaches a RAID controller, which upon initialization "scans each write in progress journal stored within nonvolatile memory" to determine whether any write operation was interrupted when power was lost. If a journal has not been erased, the controller "causes data blocks from those sectors to be read from disks 307 to the RAID buffers 407 and then compares

the time stamps from each data block with the expected value as read from nonvolatile memory 413" to determine whether data corruption occurred. Katz neither teaches nor suggests a storage array controller configured to, initiate extent and unit scrubbing operations to determine whether data corruption has occurred in a segment of storage through the generation of hierarchical checksums, as presented in claim1.

Neither Admitted Prior Art nor Katz taken either singly or in combination teaches or suggests a storage system as describe in claim 1. Therefore, the Applicants assert that claim 1 is patentably distinguishable over the cited prior art.

Applicants assert that independent claim 21 is patentably distinguishable over the cited prior art for reasons similar to those given above with regard to claim 1.

Furthermore, Applicants specifically traverse the rejection of each of the dependent claims. Applicants assert that the combination of features recited in each of the dependent claims is not taught or suggested by the cited art. The Examiner made no attempt to show how each specific combination of features recited in each dependent claim is taught or suggested by the cited art. Applicants remind the Examiner that the statute clearly places a burden of proof on the Examiner to show why each claim is anticipated or rendered obvious by the prior art. *In re Warner*, 154 USPQ 173, 177 (C.C.P.A. 1967), *cert. denied*, 389 U.S. 1057 (1968). The rejection of each dependent claim is improper since the Examiner has not demonstrated how the specific combination of features recited in each dependent claim is taught or suggested by the cited art. Applicants further assert that a careful review of AAPA and Katz does not reveal any teachings that would anticipate or rendered obvious any of Applicants' dependent claims.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-83701/RCK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees ( ).

☐ Other:

Respectfully submitted,

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